

## **REMARKS**

The Applicants thank the Examiner for the interview conducted on January 7, 2009. Applicants presented a new set of claims with the closed ended language "consisting of." Applicants argued that the presently claimed invention is not anticipated nor obvious over the cited prior art. The Examiner presented newly searched prior art such as US20030060525, US6403889, US6282778, US20020189697 and US4204086 and stated that the preceding prior art may be utilized in a new rejection. The examiner indicated that the prior art disclose adhesives. It was discussed that a Declaration may be filed to show unobviousness of the patent application.

Claim 1-67 have been cancelled. Claim 68-76 have been added. It is submitted that there are no new matter incorporated in these amendments.

It is submitted that if the product claims of Group I are allowed, as per MPEP §821.04, Group II, directed to the process of making and other claims dependent from the allowed product claims should be rejoined.

### **35 U.S.C. 103**

A. Applicants request the withdrawal of claims 41-43, 46-48, 50, 53-54 and 57-67 under 35 U.S.C. 103 as being unpatentable over Chan et al. US 548648 in view of Goehlich US 6784371.

As a preliminary matter, Applicants have amended the claims to a "closed-ended" language, "**consisting of**". The phrase "**consisting of**" means that the dry coaxial cable and manufacturing method thereof have the recited elements or embodiments (or steps) and no more.

Thus, the present claims cover only dry coaxial cable **consisting of** the metal core conductor element, a dielectric element around the core conductor based on three layers, a) the first layer being applied onto the conductor as a uniformly thick film based on low density polyethylene mixed with a vinyl or acrylic adhesive, b) the second layer being based on an expanded polyethylene mix consisting of low density polyethylene or mixture of low, medium and high density polyethylenes and a swelling agent selected from azodicarbonamide, p-toluene sulphonylhydrazide, or 5-phenyltetrazol, and c) optionally a reinforcement layer of the same characteristics as the first layer; wherein it

has a second external conductor element formed by a tape made of an aluminum or copper alloy or combined with other elements and surrounding said conductor consisting of a water penetration protective element keeping it dry and based on one or several swellable fibers or tapes formed by polyester threads or other swellable fibers; and the protective cover based on low, medium, high density polyethylene or a combination thereof. Other embodiments would not be encompassed by the claims.

The transitional phrase "consisting of" excludes any element, step, or ingredient not specified in the claim. *In re Gray*, 53 F.2d 520, 11 USPQ 255 (CCPA 1931); *Ex parte Davis*, 80 USPQ 448, 450 (Bd. App. 1948) ("consisting of" defined as "closing the claim to the inclusion of materials other than those recited except for impurities ordinarily associated therewith.").

In addition, Applicants submit that the claims as recited have been issued in Europe as EP1457996 on March 21, 2007.

**Chan et al. (U.S. 5,486,648)**

Chan et al. is directed to electric power cables having CONCENTRIC NEUTRAL WIRES (CN) applied helically over the cable core as a metallic ground shield which is then protected with a protective polymeric jacket.

The configuration of the cable of Chan et al. **comprises** a) a cable having a core (solid or stranded conductor made of copper or aluminum); b) a semi-conductor shield layer made of semi-conductive polymeric compound such as crosslinked polyolefin (XLPE, ethylene propylene rubber (EPR) or ethylene vinyl acetate); c) an insulation layer over shield layer such as polyethylene, XLPE, EPR or the like; d) a semi-conductive insulation shield over the insulation layer and e) concentric neutral wires (CN) as metallic ground shield applied helically over cable core.

It is submitted that the presence of several configurations of CN are **required** in Chan in order to prevent water penetration. CN is the key embodiment in Chan et al. There is no suggestion or motivation to one of ordinary skill in the art to eliminate the CN configuration in Chan and achieve the electric power cable with waterblock elements.

The presently claimed invention does not require the CN configuration in order to achieve the dry water resistant cable of presently claimed invention with modified tensile

strength, highly resistant to diaphony, highly crush and moisture resistant, and provides high speed digital services link, as well as analog services.

**Goehlich (U.S. 6,784,371)**

Goehlich (U.S. 6,784,371) is directed to power cables comprising a cable core, inner cable sheath, an outer sheath and a sensor. Goehlich has a totally different configuration as compared to the cable of the present invention. Thus, the cable of Goehlich has sensor for detecting a detectable substance such as water inside the cable. The object of Goehlich is to provide a cable which meets the requirements of *detecting* water in the interstices between the outer sheath, i.e., plastic and inner sheath, i.e. metal or plastic.

Moreover, Goehlich comprises a “structured material” between the inner cable sheath and the outer sheath to allow detectable substance. The invention of Goehlich centers on “structured material”. The “structured material may include a) swellable material; b) self adhesive; c) one or more tapes; d) sputtered tape; d) stripe shaped tape; e) sealing material.

Similarly, it is submitted that the disclosure of Goehlich does not provide motivation or suggestion to one of ordinary skill in the art and arrive at the presently claimed invention with the close ended language.

Applicants request the withdrawal of claims 41-43, 46-48, 50, 53-54 and 57-67 under 35 U.S.C. 103 as being unpatentable over Chan et al. US 548648 in view of Goehlich US 6784371.

B. Applicants request the withdrawal of claims 44-45, 49, 51-52 and 55-56 under 35 U.S.C. 103 as being unpatentable over Chan et al. US 548648 in view of Goehlich US 6784371 and further in view of Belli US 6455769.

Similarly, Chan et al. disclose an electric power cable having concentric neutral wires (CN wires) applied helically over the cable core. The cable core comprises a solid or stranded conductor made of copper or aluminum; a semiconductive shield layer (XLPE, EPR, EVA; an insulation layer made of XLPE, EPR; a semiconductive insulation shield made of XLPE, EPR, or EVA. Note col. 4, lines 19-37.

It is submitted that there is no reasonable expectation that Chan et al. would eliminate any of the disclosed layers of the invention and achieve the electric power cable core of Chan. Each of the embodiments of the power cable of Chan, more particularly the CN configuration, is required in order to provide improved protection against the migration of water.

**Belli et al. (U.S.6,455,769)**

Belli et al. (U.S.6,455,769) disclose electrical cables for high or medium voltage power transmission in distribution having semiconductor water blocking expanded layer.

Belli et al. is directed to a cable **comprising** a conductor (1), an inner semi-conductive layer (2); insulating layer(3); compact semi-conductive non-expanded layer (4); expanded layer (5); metal shield (6) and an outer sheath (7). **Belli discloses the use of fillers which the presently claimed invention avoids.**

The exclusion of fillers was specifically contemplated in the Applicants' specification. Moreover, the Applicants' claimed invention is directed to a closed ended language "consisting of" which excludes ingredients which are detrimental to the performance and activity of the claimed dry, water resistant coaxial cable.

Applicants submit that Belli provides **no intention** to provide a cable without the use of fillers. Nothing in Belli discloses or suggests the presently claimed invention regarding the use of a swellable polymer. If anything, Belli teaches away from the claimed invention.

The present invention **required** a swelling agent without the use of a filler. The cable provides high speed digital signal transmission *without* interference from voice service signals and use of additional electronic circuits to separate signals.

Moreover, Belli's problems are directed to high voltage and medium voltage transmission. Thus, even if Belli was considered, the disclosures would not suggest the invention to one skilled in the art. If the prior art does not appreciate the existence of the problem solved by the invention, the Applicants' recognition of the problem is in itself, **strong evidence of non-obviousness of the present invention.** *In re Nomiya*, 184 USPQ 607 (CCPA 1975).

The Applicants submit that the Examiner failed to establish a *prima facie* case of obviousness. The issue is whether it is proper to combine the teachings of Chan in any manner with Goehlich and further with Belli.

The problems addressed and solved by the Belli and Goehlich are not similar to the problems addressed by Chan. Applicants submit that Goehlich is directed to "structured materials" which can not be sufficiently attenuated to the cable design of Chan and is not properly combineable therewith.

The cable art area of Chan is so different to be non-analogous. It employs the CN configuration which Belli or Goehlich do not use. The combination of references from non-analogous art has long been held to be improper. See MPEP 2141.01(a). *In re Oetiker*, 24 USPQ 2d 1443 (Fed. Cir. 1992) and *In re Clay*, 23 USPQ 2d 1058 (Fed. Cir. 1992). In *Clay*, the court laid out the criteria as follows:

"Two criteria have evolved for determining whether prior art is analogous: 1) whether the art is from the same field of endeavor regardless of the problem addressed; and 2) if the reference is not within the field of inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved. *In re Demniski*, 230 USPQ 313, 315 (Fed. Cir. 1986); *In re Wood*, 202 USPQ 171, 174 (CCPA 1979).

Applicants request the withdrawal of claims 44-45, 49, 51-52 and 55-56 under 35 U.S.C. 103 as being unpatentable over Chan et al. US 548648 in view of Goehlich US 6784371 and further in view of Belli US 6455769.

Finally, Applicants have reviewed the prior art cited by the Examiner at the interview. The following are the arguments of Applicants.

**Fox et al., (U.S. 6,282,778)**

Fox discloses a foam dielectric coaxial cable comprising a core including at least one inner conductor and a closed cell foam dielectric surrounding the inner conductor. A tubular metallic sheath closely surrounds and bonded to the core. The foamable polymer composition comprises a polyolefin, an endothermic nucleating agent and a blowing agent. The foamable polymer composition which comprises a thermoplastic binder is caused to foam and expand to form a cable core comprised of an expanded foam dielectric surrounding the advancing conductor. Fox was directed to an expanded foam

dielectric which surrounds the inner conductor.

In contrast, the presently claimed invention is directed to a dry, water resistant coaxial cable **consisting of** a metal core conductor, a dielectric element around the core conductor based on 3 layers. There is no disclosure or suggestion in Fox et al. regarding additional layers as a dielectric element. Although adhesive was disclosed, Fox does not disclose the configuration of the presently claimed invention.

**Mehan et al., U.S.6,403,889**

Mehan discloses a **bi-layer covering sheath, comprising:** (a) a foamable thermoplastic polymeric inner layer, and (b) a non-foamable non-heat-shrinkable thermoplastic polymeric outer layer surrounding and in intimate contact with the inner layer. The outer layer has a melting point of at least 60°C-100 °C above the melting point of the inner layer. The inner layer preferably contains a chemical crosslinking agent to stabilize the foamed polymer.

Similarly, Applicants submit that Mehan is directed to a bi-layer *covering sheath* and does not disclose or suggest the dry water resistant coaxial cable nor the configuration and properties of the presently claimed invention.

**Suzuki, U.S. 4,204,086**

The cable of Suzuki comprises a mixture of polyolefin, a nucleating agent (solid blowing agent and a decomposition accelerator) and a **volatile liquid** blowing agent (solvents). The polyolefin mixture is a mixture of low density polyethylene and high density polyethylene. In addition, Suzuki is directed to a process for producing a highly expanded polyolefin insulated coaxial cable wherein the foaming ratio is in excess of 2.5 times (60% expansion degree) tightly adhered to said inner conductor.

It is submitted that the configuration and properties of the coaxial cable of the presently claimed invention is different and unobvious from the polyolefin insulated wires and cables of Suzuki. Other ingredients or components of Suzuki are not included in the presently claimed dry, water resistant coaxial cable. It is submitted that the preparation of the dry, water resistant coaxial cable of the present invention does not employ solvents and other cleaning agents. Similarly, Suzuki teaches away from the presently claimed invention.

**Gupta, US20030060525**

Gupta discloses a flexible foamed polyethylene formed from a blend of 2 to about 15 percent by weight styrene-elastomer block copolymer; b) from about 60 to about 90 percent by weight polyolefin; c) from about 4 to about 15 percent by weight plasticizer oil; and d) from about 0 to about 3 percent by weight of at least one additive. The styrene-elastomer block copolymer is a tri-block copolymer structure that includes styrene end-blocks and a mid-block of a saturated olefm elastomer.

Similarly, Gupta does not provide any teaching or disclosure to show obviousness of the presently claimed invention. Gupta is directed to flexible foamed polyethylene formed from a blend while the present invention is directed to a dry, water resistant cable **consisting of** a metal core conductor, a dielectric element around the core conductor based on 3 layers.

**Jarvenkyla, US20020189697**

Jarvenkyla is directed to a multilayer pipe which **comprises** at least an inner layer and an outer layer. The inner layer being made of extrudable plastic, e.g., polyethylene PE, crosslinked polyethylene (PEX) or polypropylene. The matrix plastic of the outer layer being made of extrudable plastic. The outer layer made of short cut fibers and/or ceramic whiskers, being arranged to be a fire-protection layer and the outer layer containing a non-reacted foaming agent and at least one additive in such a manner that the outer layer has a fire-retardant component and a pipe-reinforcing component. The fire retardant of Jarvenkyla's multilayer pipe is an **inorganic filler** such as aluminum trihydrate (ATH), vermiculite, silicate, phosphate or carbonate or another halogen free fire protecting agent.

In contrast, the presently claimed invention is directed to a dry, water resistant cable **consisting of** a metal core conductor, a dielectric element around the core conductor based on 3 layers which **avoids the use of fillers** and incorporates the water penetration element which permit to prepare the coaxial cable without using solvents and other cleaning agents. If anything, Applicants submit that Jarvelynka teaches away from the present invention. It is submitted that the cable of the present invention provides high

speed digital signal transmission without interference from voice signals and use of additional electronic circuits to separate signals.

Applicant submits that the introduction of additional steps or components would materially change the characteristics of Applicant's presently claimed invention. *In re De Lajarte*, 337 F.2d 870, 143 USPQ 256 (CCPA 1964). See also *Ex parte Hoffman*, 12 USPQ2d 1061, 1063-64 (Bd. Pat. App. & Inter. 1989).

From the above, it is submitted that there is no motivation or suggestion to one of ordinary skill in the art to show that the presently claimed invention is obvious. Applicants have presented the above reasons why the claims are not rendered obvious by the cited references. Each of these arguments alone is sufficient to establish that a *prima facie* case of unpatentability has not been made. In combination, they present a compelling argument that the claims are patentable over the prior art. It is submitted that the Examiner has not presented sufficient arguments or reasoning to contradict the evidence provided by Applicants that the prior art fails to provide a suggestion for providing an improved dry water resistant coaxial cable and method of manufacture thereof with unexpected properties.

In view of the above, withdrawal of the rejection is respectfully requested. It is respectfully submitted that the claims are in condition for allowance. In the event that there are any problems which can be expedited by telephone conference, the Examiner is invited to telephone the Applicants' undersigned attorney at the telephone number listed below.

Respectfully submitted,

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